AMENDMENT

Amendment to Claims

Please add the following claims as shown below.

56. (Newly added) A wireless communication device comprising:

    a channel estimator, responsive to one or more antennas, to receive a plurality of signals associated with a communication channel, and to obtain a measurement of the communication channel;

    a processing element, responsive to the channel estimator, to compute for a plurality of proposed mapping schemes a minimum Euclidean distance between symbols of the received signal(s) based, at least in part, on the channel measurement; and

    a selection block, responsive to at least one of the channel estimator and the processing element, to select a mapping scheme from the proposed mapping schemes based, at least in part, on the computed minimum Euclidean distance to control a performance parameter associated with the communication channel.

57. (Newly added) A wireless communication device according to claim 56, wherein the performance metric is one or more of a measure of receive signal strength, a measure of interference, a signal-to-noise ratio (SNR), a signal-to-interference and noise ratio (SINR), a bit-error rate (BER), a packet-error rate (PER).

58. (Newly added) A wireless communication device according to claim 56, wherein the channel estimator obtains a measurement of the channel coefficients matrix H characterizing the communication channel.

59. (Newly added) A wireless communication device according to claim 58, wherein selection block selects an applied mapping scheme for use by a remote transmitter of the communication channel from a plurality of potential mapping schemes based, at least in part, on the measurement of the channel coefficient matrix H.

60. (Newly Added)   A wireless communication device according to claim 58, further comprising:

____   a local transmitter, responsive to the selection block, to communicate the select applied mapping scheme to a remote transmitter of the communication channel for application to subsequent transmission via the communication channel.

61. (Newly added)   A wireless communication device according to claim 56, wherein the proposed mapping schemes include one or more of modulating said data in a constellation selected from the group consisting of PSK, QAM, GMSK, FSK, PAM, PPM, CAP, CPM.

62. (Newly added)   A wireless communication device according to claim 56, wherein the wireless communication device is a wireless station in a wireless network including one or more antenna(e) through which downlink signals are received from remote wireless access point.

63. (Newly added)   A wireless communication device according to claim 56, further comprising:

____   a memory system to store content including executable content; and

____   one or more processor element(s), coupled with the memory system, to selectively access and execute at least a subset of the stored content to implement one or more of the channel estimator, computing block and selection block.

64. (Newly added) A wireless communication device comprising:

____   a channel estimator, responsive to one or more antennas, to receive a plurality of signals associated with a communication channel, and to obtain a measurement of the communication channel;

____   a processing element, responsive to the channel estimator, to compute for a plurality of proposed mapping schemes a probability of error of the received signal(s); and

____   a selection block, responsive to at least one of the channel estimator and the processing element, to select a mapping scheme from the proposed mapping schemes based, at least in part, on the computed probability of error to control a performance parameter associated with the communication channel.

65. (Newly added)   A wireless communication device according to claim 64, wherein the performance metric is one or more of a measure of receive signal strength, a measure of interference, a signal-to-noise ratio (SNR), a signal-to-interference and noise ratio (SINR), a bit-error rate (BER), a packet-error rate (PER).

66. (Newly added)   A wireless communication device according to claim 64, wherein the channel estimator obtains a measurement of the channel coefficients matrix H characterizing the communication channel.

67. (Newly Added)   A wireless communication device according to claim 64, further comprising:

      a local transmitter, responsive to the selection block, to communicate the select applied mapping scheme to a remote transmitter of the communication channel for application to subsequent transmission via the communication channel.

68. (Newly added)   A wireless communication device according to claim 64, wherein the proposed mapping schemes include one or more of modulating said data in a constellation selected from the group consisting of PSK, QAM, GMSK, FSK, PAM, PPM, CAP, CPM.

69. (Newly added)   A wireless communication device according to claim 64, further comprising:

      a memory system to store content including executable content; and

      one or more processor element(s), coupled with the memory system, to selectively access and execute at least a subset of the stored content to implement one or more of the channel estimator, computing block and selection block.

70. (Newly added)   A wireless communication device comprising:

      a conversion unit, to receive data for wireless transmission to a remote device and to convert the received data into symbols;

_____ an assignment unit, responsive to the conversion unit, to assign the symbols to transmit signals TS_p of the communication channel, where $p=1...M$, for transmission from M transmit antennas; and

_____ a receive element, coupled with the conversion unit and the assignment unit, to receive an indication of a selected mapping scheme from a plurality of possible mapping schemes from a remote communication unit, wherein the conversion and assignment are performed in accordance with the select mapping scheme.

71. (Newly Added)   A wireless communication device according to claim 70, wherein the indication of the applied mapping scheme is received from a remote wireless communication device and is selected based, at least in part, on a minimum Euclidean distance of symbols in the received signals TS_p.

72. (Newly Added)   A wireless communication device according to claim 70, wherein the indication of the applied mapping scheme is received from a remote wireless communication device and is selected based, at least in part, on a probability of error of said symbols in the received signals TS_p.

73. (Newly Added)   A wireless communication device comprising:

_____ two or more omnidirectional antenna(e) through which signals associated with a communication channel are received;

_____ a channel estimator, responsive to at least a subset of the antennas, to obtain a measurement of the received communication channel;

_____ a processing element, responsive to the channel estimator, to compute for a plurality of proposed mapping schemes a minimum Euclidean distance between symbols of the received signal(s) based, at least in part, on the channel measurement; and

_____ a selection block, responsive to at least one of the channel estimator and the processing element, to select a mapping scheme from the proposed mapping schemes based, at least in part, on the computed minimum Euclidean distance to control a performance parameter associated with the communication channel.

74. (Newly Added)   A communication device according to claim 73, further comprising:

 a local transmitter, responsive to the selection block, to communicate the select applied mapping scheme to a remote transmitter of the communication channel for application to subsequent transmission via the communication channel.

75. (Newly added)   A wireless communication device according to claim 74, wherein the proposed mapping schemes include one or more of modulating said data in a constellation selected from the group consisting of PSK, QAM, GMSK, FSK, PAM, PPM, CAP, CPM.

76. (Newly Added)   A wireless communication device comprising:

 two or more omnidirectional antenna(e) through which signals associated with a communication channel are received;

 a channel estimator, responsive to at least a subset of the antennas, to obtain a measurement of the received communication channel;

 a processing element, responsive to the channel estimator, to compute for a plurality of proposed mapping schemes a probability of error of the symbols of the received signal(s); and

 a selection block, responsive to at least one of the channel estimator and the processing element, to select a mapping scheme from the proposed mapping schemes based, at least in part, on the computed probability of error to control a performance parameter associated with the communication channel.

77. (Newly Added)   A communication device according to claim 76, further comprising:

 a local transmitter, responsive to the selection block, to communicate the select applied mapping scheme to a remote transmitter of the communication channel for application to subsequent transmission via the communication channel.

78. (Newly added)   A wireless communication device according to claim 76, wherein the proposed mapping schemes include one or more of modulating said data in a constellation selected from the group consisting of PSK, QAM, GMSK, FSK, PAM, PPM, CAP, CPM.

CLEAN VERSION OF CLAIMS FOR SCANNING PER 37 CFR § 1.173

56. (Newly added) A wireless communication device comprising:

a channel estimator, responsive to one or more antennas, to receive a plurality of signals associated with a communication channel, and to obtain a measurement of the communication channel;

a processing element, responsive to the channel estimator, to compute for a plurality of proposed mapping schemes a minimum Euclidean distance between symbols of the received signal(s) based, at least in part, on the channel measurement; and

a selection block, responsive to at least one of the channel estimator and the processing element, to select a mapping scheme from the proposed mapping schemes based, at least in part, on the computed minimum Euclidean distance to control a performance parameter associated with the communication channel.

57. (Newly added) A wireless communication device according to claim 56, wherein the performance metric is one or more of a measure of receive signal strength, a measure of interference, a signal-to-noise ratio (SNR), a signal-to-interference and noise ratio (SINR), a bit-error rate (BER), a packet-error rate (PER).

58. (Newly added) A wireless communication device according to claim 56, wherein the channel estimator obtains a measurement of the channel coefficients matrix H characterizing the communication channel.

59. (Newly added) A wireless communication device according to claim 58, wherein selection block selects an applied mapping scheme for use by a remote transmitter of the communication channel from a plurality of potential mapping schemes based, at least in part, on the measurement of the channel coefficient matrix H.

60. (Newly Added) A wireless communication device according to claim 58, further comprising:

a local transmitter, responsive to the selection block, to communicate the select applied mapping scheme to a remote transmitter of the communication channel for application to subsequent transmission via the communication channel.

61. (Newly added)   A wireless communication device according to claim 56, wherein the proposed mapping schemes include one or more of modulating said data in a constellation selected from the group consisting of PSK, QAM, GMSK, FSK, PAM, PPM, CAP, CPM.

62. (Newly added)   A wireless communication device according to claim 56, wherein the wireless communication device is a wireless station in a wireless network including one or more antenna(e) through which downlink signals are received from remote wireless access point.

63. (Newly added)   A wireless communication device according to claim 56, further comprising:

a memory system to store content including executable content; and

one or more processor element(s), coupled with the memory system, to selectively access and execute at least a subset of the stored content to implement one or more of the channel estimator, computing block and selection block.

64. (Newly added) A wireless communication device comprising:

a channel estimator, responsive to one or more antennas, to receive a plurality of signals associated with a communication channel, and to obtain a measurement of the communication channel;

a processing element, responsive to the channel estimator, to compute for a plurality of proposed mapping schemes a probability of error of the received signal(s); and

a selection block, responsive to at least one of the channel estimator and the processing element, to select a mapping scheme from the proposed mapping schemes based, at least in part, on the computed probability of error to control a performance parameter associated with the communication channel.

65. (Newly added)   A wireless communication device according to claim 64, wherein the performance metric is one or more of a measure of receive signal strength, a measure of interference, a signal-to-noise ratio (SNR), a signal-to-interference and noise ratio (SINR), a bit-error rate (BER), a packet-error rate (PER).

66. (Newly added)   A wireless communication device according to claim 64, wherein the channel estimator obtains a measurement of the channel coefficients matrix H characterizing the communication channel.

67. (Newly Added)   A wireless communication device according to claim 64, further comprising:

a local transmitter, responsive to the selection block, to communicate the select applied mapping scheme to a remote transmitter of the communication channel for application to subsequent transmission via the communication channel.

68. (Newly added)   A wireless communication device according to claim 64, wherein the proposed mapping schemes include one or more of modulating said data in a constellation selected from the group consisting of PSK, QAM, GMSK, FSK, PAM, PPM, CAP, CPM.

69. (Newly added)   A wireless communication device according to claim 64, further comprising:

a memory system to store content including executable content; and

one or more processor element(s), coupled with the memory system, to selectively access and execute at least a subset of the stored content to implement one or more of the channel estimator, computing block and selection block.

70. (Newly added)   A wireless communication device comprising:

a conversion unit, to receive data for wireless transmission to a remote device and to convert the received data into symbols;

an assignment unit, responsive to the conversion unit, to assign the symbols to transmit signals TS_p of the communication channel, where p=1...M, for transmission from M transmit antennas; and

a receive element, coupled with the conversion unit and the assignment unit, to receive an indication of a selected mapping scheme from a plurality of possible mapping schemes from a remote communication unit, wherein the conversion and assignment are performed in accordance with the select mapping scheme.

71. (Newly Added)   A wireless communication device according to claim 70, wherein the indication of the applied mapping scheme is received from a remote wireless communication device and is selected based, at least in part, on a minimum Euclidean distance of symbols in the received signals TS_p.

72. (Newly Added)   A wireless communication device according to claim 70, wherein the indication of the applied mapping scheme is received from a remote wireless communication device and is selected based, at least in part, on a probability of error of said symbols in the received signals TS_p.

73. (Newly Added)   A wireless communication device comprising:

two or more omnidirectional antenna(e) through which signals associated with a communication channel are received;

a channel estimator, responsive to at least a subset of the antennas, to obtain a measurement of the received communication channel;

a processing element, responsive to the channel estimator, to compute for a plurality of proposed mapping schemes a minimum Euclidean distance between symbols of the received signal(s) based, at least in part, on the channel measurement; and

a selection block, responsive to at least one of the channel estimator and the processing element, to select a mapping scheme from the proposed mapping schemes based, at least in part, on the computed minimum Euclidean distance to control a performance parameter associated with the communication channel.

74. (Newly Added)   A communication device according to claim 73, further comprising:

a local transmitter, responsive to the selection block, to communicate the select applied mapping scheme to a remote transmitter of the communication channel for application to subsequent transmission via the communication channel.

75. (Newly added)   A wireless communication device according to claim 74, wherein the proposed mapping schemes include one or more of modulating said data in a constellation selected from the group consisting of PSK, QAM, GMSK, FSK, PAM, PPM, CAP, CPM.

76. (Newly Added)   A wireless communication device comprising:

two or more omnidirectional antenna(e) through which signals associated with a communication channel are received;

a channel estimator, responsive to at least a subset of the antennas, to obtain a measurement of the received communication channel;

a processing element, responsive to the channel estimator, to compute for a plurality of proposed mapping schemes a probability of error of the symbols of the received signal(s); and

a selection block, responsive to at least one of the channel estimator and the processing element, to select a mapping scheme from the proposed mapping schemes based, at least in part, on the computed probability of error to control a performance parameter associated with the communication channel.

77. (Newly Added)   A communication device according to claim 76, further comprising:

a local transmitter, responsive to the selection block, to communicate the select applied mapping scheme to a remote transmitter of the communication channel for application to subsequent transmission via the communication channel.

78. (Newly added)   A wireless communication device according to claim 76, wherein the proposed mapping schemes include one or more of modulating said data in a constellation selected from the group consisting of PSK, QAM, GMSK, FSK, PAM, PPM, CAP, CPM.